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EXAMINER

PEREZ, G

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| ART UNIT | PAPER NUMBER |
|----------|--------------|

2834

DATE MAILED: 07/12/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/281,059

Applicant(s)

Asao et al.

Examiner

Guillermo Perez

Group Art Unit

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☒ Responsive to communication(s) filed on May 3, 2000

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-3 is/are pending in the application

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-3 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 to 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (APA) in view of Hiroshima et al. (U.S. Pat. No. 5, 174, 013) and further in view of Harris et al. (U.S. Pat. No. 5, 539, 265).

APA discloses a rotor (1) for an automobile alternator comprising: a pair of field cores (12a, 12b) each having a cylindrical base portion (121a, 121b) and a plurality of claw-shaped magnetic poles (122a, 122b) projecting from outer circumferential edges of said base portions (121a, 121b), said field cores (12a, 12b) are secured to a rotating shaft (11) facing each other wherein end surfaces of said base portions (121a, 121b) are in close contact with each other and said claw-shaped magnetic poles (122a, 122b) intermesh with each other; a cylindrical bobbin (16) having a cylindrical portion (16a) and a pair of first and second annular flange portions (16b) projecting perpendicularly from both ends of said cylindrical portion (16a), said bobbin (16) being fitted over said base portions (121a, 121b) of said pair of field cores (12a, 12b); and a field

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winding (15) wound a predetermined number of turns into multiple layers on said cylindrical portion of said bobbin of said rotor. However, APA does not disclose that said field winding has a flat shape in which a pair of opposite flat surfaces are parallel, said field winding being wound onto said cylindrical portion of said bobbin such that said pair of opposite flat surfaces face the inner circumferential side and the outer circumferential side, respectively, relative to the radial direction; nor a vibration-suppressing ring fitted on the inner circumference of said claw-shaped magnetic poles of said pair of field cores.

Hiroshima et al. disclose that said field winding (4b) has a flat rectangular shape (figure 4 and column 7, lines 24 to 27) in which a pair of opposite flat surfaces are parallel (figure 7), said field winding being wound onto said cylindrical portion of said bobbin wherein said pair of opposite flat surfaces face the inner circumferential side and the outer circumferential side, respectively, relative to a radial direction, for the purpose of increasing winding density of the coil.

Harris et al. (U.S. Pat. No. 5, 539, 265) disclose a vibration-suppressing ring (33) fitted on the inner circumference of said claw-shaped magnetic poles (12 and 14) of said pair of field cores for the purpose of preventing vibration of the fingers of pole pieces as the rotor assembly rotates within the alternator assembly as a whole.

It would have been obvious at the time the invention was made to modify the rotor of APA and provide it with field winding having a flat shape, in which a pair of opposite flat surfaces are parallel, said field winding being wound onto said cylindrical portion of said bobbin such that

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said pair of opposite flat surfaces face the inner circumferential side and the outer circumferential side, respectively, relative to the radial direction, as disclosed by Hiroshima et al.; and with a vibration-suppressing ring fitted on the inner circumference of said claw-shaped magnetic poles of said pair of field cores as disclosed by Harris et al. (U.S. Pat. No. 5, 539, 265), for the purpose of maximizing the winding density of the coil and to minimize motor vibrations during operation.

2. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Hiroshima et al. and further in view of Harris et al. (U.S. Pat. No. 5, 892, 313).

APA and Hiroshima et al. disclose a rotor as described on item 1 above. However, neither APA nor Hiroshima et al. disclose permanent magnets fitted between said claw-shaped magnetic poles of said pair of field cores.

Harris et al. (U. S. Pat. No. 5, 892, 313) disclose permanent magnets (34) fitted between said claw-shaped magnetic poles (12 and 14) of said pair of field cores for the purpose of increasing power output without increasing the physical size of the machine.

It would have been obvious at the time the invention was made to modify the rotor of APA and Hiroshima et al. and provide it with permanent magnets fitted between the claw-shaped magnetic poles of a pair of field cores as disclosed by Harris et al. (U. S. Pat. No. 5, 892, 313), for the purpose of increasing the power output of the machine without increasing the size of the machine.

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Response to Arguments

3. Applicant's arguments filed May 3, 2000 have been fully considered but they are not persuasive.

Hiroshima et al. teach that the wire can be shaped in a flat rectangular shape (column 3, lines 34 to 38 and column 7, lines 24 to 27). The flat rectangular shape gives the option of winding the wire with the flat opposite faces facing the outer circumferential side and the inner circumferential side, relative to the radial direction. As seen on figures 4 and 10, Hiroshima et al. show the flat rectangular sides of the wire being formed by the rollers 6a and 6b, and after forming the wire, it is immediately wound on the bobbin (3). The rollers are one above the other (6a over 6b), roller 6a forms the upper flat surface of the wire and roller 6b forms the lower flat surface of the wire, finally the flat rectangular wire is wound on the bobbin without twisting (figure 10).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez, can be reached on (703) 308-1371. The fax phone number for the organization where this application is proceeding is assigned is (703) 308-5841.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


NESTOR RAMIREZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

GP

July 10, 2000